Author Index
Volume 19

Akella, Srinivas, and Matthew T. Mason. Orienting toleranced polygonal parts [19:12] pp.1147–1170.

Apostolopoulos, Dimitrios S., Michael D. Wagner, Benjamin N. Shamah, Liam Pedersen, Kimberly Shillcutt, and William L. Whittaker. Technology and field demonstration of robotic search for antarctic meteorites [19:11] pp. 1015–1032.

Armstrong, Brian, and Bruce A. Wade. Nonlinear PID control with partial state knowledge: Damping without derivatives [19:8] pp. 715–731.

Aufrère, R., R. Chapuis, and F. Chausse. A dynamic vision algorithm to locate a vehicle on a nonstructured road [19:5] pp. 411–423.

Bares, John, Howie Choset, and Alex Zelinsky. Editorial: Special issue on field and service robotics [19:11] p. 971.

Belfiore, Nicola Pio, and Augusto Di Benedetto. Connectivity and redundancy in spatial robots [19:12] pp. 1245–1261.

Berkelman, Peter J., and Ralph L. Hollis. Lorentz magnetic levitation for haptic interaction: Device design, performance, and integration with physical simulations [19:7] pp. 644–667.

Bicho, Estela, Pierre Mallet, and Gregor Schöner. Target representation on an autonomous vehicle with low-level sensors [19:5] 424–447.

Chen, Dar-Zen, Yu-Chu Huang, and Dong-Wen Duh. Geared robot manipulators with a joined unit: Topologiocal synthesis and its application [19:2] pp. 183–194.

Chen, Shih-Feng, and Imin Kao. Conservative congruence transformation for joint and cartesian stiffness matrices of robotic hands and fingers [19:9] pp. 835–847.

Choset, Howie, and Joel Burdick. Sensor-based exploratrion: The heirarchical generalized Voroni graph [19:2] pp. 96–125.

Choset, Howie, Sean Walker, Kunnayut Eiamsa-Ard, and Joel Burdick. Sensor-based exploration: Incremental construction of the hierachical generalized Voronoi graph [19:2] pp. 126–148.

Clark, Christopher M., and James K. Mills. Robotic system sensitivity to neural network learning rate: Theory, simulation, and experiments [19:10] pp. 955–968.

Damaren, Christopher J. On the dynamics and control of flexible multibody systems with closed loops [19:3] pp. 238–253.

Daniel, R. W., and P. R. McAree. Multivariable stability of force-reflecting teleoperation: Structures of finite and infinite zeros [19:3] pp. 203–224.

Doggett, William R., William C. Messner, and Jer-Nan Juang. Multiple center of mass space images of single objects and their impact on path planning [19:9] pp. 848–856.

Erdmann, Michael, and Yan-Bin Jia. Editorial: Special issue on tactile presence [19:7] p. 635.

Erkmen, I., A. M. Erkman, and H. Günver. Robot hand preshaping and regrasping using genetic algorithms [19:9] pp. 857–874.

Featherstone, Roy. Book review [19:1] p. 77.

Ferrier, Nicola J., and Roger W. Brockett. Reconstructing the shape of a deformable membrane from image data [19:9] pp. 795–816.

Formal'sky, A., C. Chevallereau, and B. Perrin. On ballistic walking locomotion of a quadruped [19:8] pp. 743–761.

Gu, Edward Y. L. A configuration manifold embedding model for dynamic control of redundant robots [19:3] pp. 289–304.

Herr, Hugh M., and Thomas A. McMahon. A trotting horse model [19:6] pp. 566–581.

Hirose, Shigeo. Variable constraint mechanism and its application for design of mobile robots [19:11] pp. 1126–1138.

Ho, Chih-Hao, Cagatay Basdogan, and Mandayam A. Srinivasan. Ray-based haptic rendering: Force and torque interactions between a line probe and 3D objects in virtual environments [19:7] pp. 668–683.

Hollerbach, John M. Editorial [19:1] pp. 3–4.

Holmberg, Robert, and Oussama Khatib. Development and control of a holonomic mobile robot for mobile manipulation tasks [19:11] pp. 1066–1074.

Hongguang, Fu, Yang Lu, and Zhang Jingzhong. A set of geometric invariants for kinematic analysis of 6R manipulators [19:8] pp. 784–792.

Author Index
Volume 19

Akella, Srinivas, and Matthew T. Mason. Orienting toleranced polygonal parts [19:12] pp.1147–1170.

Apostolopoulos, Dimitrios S., Michael D. Wagner, Benjamin N. Shamah, Liam Pedersen, Kimberly Shillcutt, and William L. Whittaker. Technology and field demonstration of robotic search for antarctic meteorites [19:11] pp. 1015–1032.

Armstrong, Brian, and Bruce A. Wade. Nonlinear PID control with partial state knowledge: Damping without derivatives [19:8] pp. 715–731.

Aufrère, R., R. Chapuis, and F. Chausse. A dynamic vision algorithm to locate a vehicle on a nonstructured road [19:5] pp. 411–423.

Bares, John, Howie Choset, and Alex Zelinsky. Editorial: Special issue on field and service robotics [19:11] p. 971.

Belfiore, Nicola Pio, and Augusto Di Benedetto. Connectivity and redundancy in spatial robots [19:12] pp. 1245–1261.

Berkelman, Peter J., and Ralph L. Hollis. Lorentz magnetic levitation for haptic interaction: Device design, performance, and integration with physical simulations [19:7] pp. 644–667.

Bicho, Estela, Pierre Mallet, and Gregor Schöner. Target representation on an autonomous vehicle with low-level sensors [19:5] 424–447.

Chen, Dar-Zen, Yu-Chu Huang, and Dong-Wen Duh. Geared robot manipulators with a joined unit: Topologiocal synthesis and its application [19:2] pp. 183–194.

Chen, Shih-Feng, and Imin Kao. Conservative congruence transformation for joint and cartesian stiffness matrices of robotic hands and fingers [19:9] pp. 835–847.

Choset, Howie, and Joel Burdick. Sensor-based exploratrion: The heirarchical generalized Voroni graph [19:2] pp. 96–125.

Choset, Howie, Sean Walker, Kunnayut Eiamsa-Ard, and Joel Burdick. Sensor-based exploration: Incremental construction of the hierachical generalized Voronoi graph [19:2] pp. 126–148.

Clark, Christopher M., and James K. Mills. Robotic system sensitivity to neural network learning rate: Theory, simulation, and experiments [19:10] pp. 955–968.

Damaren, Christopher J. On the dynamics and control of flexible multibody systems with closed loops [19:3] pp. 238–253.

Daniel, R. W., and P. R. McAree. Multivariable stability of force-reflecting teleoperation: Structures of finite and infinite zeros [19:3] pp. 203–224.

Doggett, William R., William C. Messner, and Jer-Nan Juang. Multiple center of mass space images of single objects and their impact on path planning [19:9] pp. 848–856.

Erdmann, Michael, and Yan-Bin Jia. Editorial: Special issue on tactile presence [19:7] p. 635.

Erkmen, I., A. M. Erkman, and H. Günver. Robot hand preshaping and regrasping using genetic algorithms [19:9] pp. 857–874.

Featherstone, Roy. Book review [19:1] p. 77.

Ferrier, Nicola J., and Roger W. Brockett. Reconstructing the shape of a deformable membrane from image data [19:9] pp. 795–816.

Formal'sky, A., C. Chevallereau, and B. Perrin. On ballistic walking locomotion of a quadruped [19:8] pp. 743–761.

Gu, Edward Y. L. A configuration manifold embedding model for dynamic control of redundant robots [19:3] pp. 289–304.

Herr, Hugh M., and Thomas A. McMahon. A trotting horse model [19:6] pp. 566–581.

Hirose, Shigeo. Variable constraint mechanism and its application for design of mobile robots [19:11] pp. 1126–1138.

Ho, Chih-Hao, Cagatay Basdogan, and Mandayam A. Srinivasan. Ray-based haptic rendering: Force and torque interactions between a line probe and 3D objects in virtual environments [19:7] pp. 668–683.

Hollerbach, John M. Editorial [19:1] pp. 3–4.

Holmberg, Robert, and Oussama Khatib. Development and control of a holonomic mobile robot for mobile manipulation tasks [19:11] pp. 1066–1074.

Hongguang, Fu, Yang Lu, and Zhang Jingzhong. A set of geometric invariants for kinematic analysis of 6R manipulators [19:8] pp. 784–792.

Huang, Qiang, Kazuo Tanie, and Shigeki Sugano. Coordinated motion planning for a mobile manipulator considering stability and manipulation [19:8] pp. 732–742.

Huang, Wesley H., and Matthew T. Mason. Mechanics, planning, and control for tapping [19:10] pp. 883–894.

Inaba, Masayuki, Satoshi Kagami, Fumio Kanehiro, Yukiko Hoshino, and Hirochika Inoue. A platform for robotics research based on the remote-brained robot approach [19:10] pp. 933–954.

Kao, Gordon, and Penny Probert. Feature extraction from a broadband sonar sensor for mapping structured environments efficiently [19:10] pp. 895–913.

Kelly, Alonzo. Mobile robot localization from large-scale appearance mosaics [19:11] pp. 1104–1125.

Kirkham, Robin, Patrick D. Kearney, Kevin J. Rogers, and John Mashford. PIRAT–A system for quantitative sewer pipe assessment [19:11] pp. 1033–1053.

Kövecses, József, William L. Cleghorn, and Robert G. Fenton. Modeling and dynamic performance evaluation of target capture in robotic systems [19:4] pp. 365–382.

Krishnasamy, Jayaraman, and Mark J. Jakiela. Resonance-induced failure of entrapment: Application to industrial parts feeding [19:5] pp. 448–466.

Lacey, Gerard, and Shane MacNamara. Context-aware shared control of a robot mobility aid for the elderly blind [19:11] pp. 1054–1065.

Lambert, Alain, and Nadine Le Fort-Pait. Safe task planning integrating uncertainties and local maps federations [19:6] pp. 597–611.

Langer, Dirk, Markus Mettenleiter, Franz Härtl, and Christoph Fröhlich. Imaging ladar for 3-D surveying and CAD modeling of real-world environments [19:11] pp. 1075–1088.

Lee, Mark H. Tactile Sensing: New Directions, New Challenges [19:7] p. 636–643.

Lertpiriyasuwat, Vatchara, Martin C. Berg, and Keith W. Buffinton. Extended Kalman filtering applied to a two-axis robotic arm with flexible links [19:3] pp. 254–270.

Lim, Hun-ok, and Kazuo Tanie. Human safety mechanisms of human-friendly robots: Passive viscoelastic trunk and passively movable base [19:4] pp. 307–335.

Lin, Qiao, and Joel W. Burdick. Objective and frame-invariant kinematic metric functions for rigid bodies [19:6] 612–625.

Liu, Yun-Hui. Computing *n*-finger-form-closure grasps on polygonal objects [19:2] pp. 149–158.

Lucas, Stuart R., Craig R. Tischler, and Andrew E. Samuel. Real-time solution of the inverse kinematic-rate problem [19:12] pp. 1236–1244.

López-Orozco, J. A., J. M. de la Cruz, E. Besada, and P. Ruipérez. An asynchronous, robust, and distributed multisensor fusion system for mobile robots [19:10] pp. 914–932.

Lynch, Kevin M., Naoji Shiroma, Hirohiko Arai, and Kazuo Tanie. Collision-Free Trajectory Planning for a 3-DoF Robot with a Passive Joint [19:12] pp. 1171–1184.

Macnab, C.J.B., and G.M.T. D'Eleuterio. Discrete-time Lyapunov design for neroadaptive control of elastic joint robots [19:5] 511–527.

McAree, P. R., and R. W. Daniel. Stabilizing impacts in force-reflecting teleoperation using distance-to-impact estimates [19:4] pp. 349–364.

Montano, Luis, Francisco José García, and José Luis Villarroel. Using the time petri net formalism for specification, validation, and code generation in robot-control applications [19:1] pp. 59–76.

Morris, A. S., and S. Khemaissia. A fast new algorithm for a robot neurocontroller using inverse QR decomposition [19:1] pp. 32–41.

Mutambara, Arthur G. O., and Hugh F. Durrant-Whyte. Fully decentralized estimation and control for a modular wheeled mobile robot [19:6] pp. 582–596.

Nenchev, Dragomir N., Yuichi Tsumaki, and Masaru Uchiyama. Singularity-consistent parameterization of robot motion and control [19:2] pp. 159–182.

Ostrovskaya, S., J. Angeles, and R. Spiteri. Dynamics of a mobile robot with three ball-wheels [19:4] pp. 383–393.

Ostrowski, James P., Jaydev P. Desai, and Vijay Kumar. Optimal gait selection for nonholonomic locomotion systems [19:3] pp. 225–237.

Pal, Prabir K., and Dayal C. Kar. Gait optimization through search [19:4] pp. 394–408.

Partridge, Chad B., and Mark W. Spong. Control of planar rigid body sliding with impacts and friction [19:4] pp. 336–348.

Reichler, Jesse A., and Fred Delcomyn. Dynamic simulation and controller interfacing for legged robots [19:1] pp. 42–58.

Rouff, Marc, and Michel Cotsaftis. Eigenfrequencies invariance property in one-link robotic arm [19:8] pp. 780–783.

Rowe, Neil C., and Robert S. Alexander. Finding optimal-path maps for path planning across weighted regions [19:2] pp. 83–95.

Salcudean, Septimiu E., Ming Zhu, Wen-Hong Zhu, and Keyvan Hashtrudi-Zaad. Transparent Bilateral Teleoperation under Position and Rate Control [19:12] pp. 1185–1202.

Santos, Vitor M., José P. Castro, and M. Isabel Ribeiro. A Nested-Loop Architecture for Mobile Robot Navigation. [19:12] pp. 1218–1235.

Shiller, Zvi. Online suboptimal obstacle avoidance [19:5] 480–497.

Schwarzer, Fabian, Achim Schweikard, and Leo Joskowicz. Efficient linear unboundedness testing: Algorithm and applications to translational assembly planning [19:9] pp. 817–834.

St-Onge, Boris Mayer, and Clément M. Gosselin. Singularity analysis and representation of the general gough-stewart platform [19:3] pp. 271–289.

Sukkarieh, Salah, Peter Gibbens, Ben Grocholsky, Keith Willis, and Hugh F. Durrant-Whyte. A low-cost, redundant inertial measurement unit for unmanned air vehicles [19:11] pp. 1089–1103.

Teichman, Marek, and Bud Mishra. Reactive robotics I: Reactive grasping with a modified gripper and multifingered hands [19:7] pp. 697–708.

Thrun, S., M. Beetz, M. Bennewitz, W. Burgard, A. B. Cremers, F. Dellaert, D. Fox, D. Hähnel, C. Rosenberg, N. Roy, J. Schulte, and D. Schulz. Probabilistic algorithms and the interactive museum tour-guide robot Minerva [19:11] pp. 972–999.

van der Stappen, A. Frank, Chantal Wentink, and Mark H. Overmars. Computing immobilizing grasps of polygonal parts [19:5] pp. 467–479.

Van Vliet, J., I. Sharf, and O. Ma. Experimental validation of contact dynamics simulation of constrained robotic tasks [19:12] pp. 1203–1218.

Venema, Steven C., and Blake Hannaford. Experiments in fingertip perception of surface discontinuities [19:7] pp. 684–696.

Vischer, Peter, and Reymond Clavel. Argos: A novel 3-DoF parallel wrist mechanism [19:1] pp. 5–11.

Wagner, Israel A., Michael Lindenbaum, and Alfred M. Bruckstein. MAC vs. PC: Determinism and randomness as complementary approaches to robotic exploration of continuous unknown domains [19:1] pp. 12–31.

Wise, Kevin D., and Adrian Bowyer. A survey of global configuration-space mapping techniques for a single robot in a static environment [19:8] pp. 762–779.

Wright, Mark W., and Graham A. Deacon. A catastrophe theory model of planar orientation [19:6] pp. 531–565.

Yoerger, Dana R., Deborah S. Kelley, and John R. Delaney. Fine-scale three-dimensional mapping of a deep-sea hydrothermal vent site using the Jason ROV system [19:11] pp. 1000–1014.

Yoshida, Koji, and Wisama Khalil. Verification of the positive definiteness of the inertial matrix of manipulators using base inertial parameters [19:5] pp. 498–510.